EXECUTIVE SUMMARY

This Sustainability Plan is meant to help the Key Biscayne Village government develop policies and initiatives consistent with responsible stewardship of Key Biscayne's environment and infrastructure. It includes a series of short and long-term goals to be overseen by an appointed Director of Sustainability. Ultimately, these goals aim to protect the health and well-being of the community for present and future generations.

The Sustainability Plan also guides the Green Committee in its mission: "To advise and support the Village Mayor and Council by identifying efficient and ecological best practices and tangible protocols and recommending strategies to implement such practices, ensuring the sustainable management of Village resources for current and future generations of the Key Biscayne Community."

Given the dynamic nature of codes, regulations, products, services, community needs and resources, this plan should be viewed as a living document, subject to change with changing inputs and needs.

VILLAGE SUPPORT

The Green Committee is pleased to recognize the guidance of Council member Theodore Holloway and the collaboration of BZP Director Jud Kurlancheek to make this Sustainability Plan possible. We thank Mayor Franklin Caplan for his vision and commitment to making Key Biscayne a green and sustainable community.

THE BENEFITS OF SUSTAINABILITY PLANNING

Through a conscientious and consistent effort, we have the potential to make changes and adopt practices that carry important benefits. These include decreased energy usage and costs; lower traffic volume; reduced liquid and solid wastes; and improved local air, water and soil quality. Taken together, these improve the quality of life and the public health of Key Biscayne residents and visitors. A secondary but not unimportant benefit is to increase environmental awareness and stewardship by all.

Longer term, reducing the Village's carbon footprint contributes our share to climate impact mitigation. Improving the Village's resiliency against the potential risks and costs from environmental impacts helps control insurance costs and helps preserve the Village of Key Biscayne as an "Island Paradise" for future generations.

SUSTAINABILITY PLAN DEVELOPMENT PROCESS

The Village of Key Biscayne first launched efforts to increase awareness and promote environmental best practices during 2007. In April of that year, Mayor Robert Vernon signed the U.S. Conference of Mayors' Climate Protection Agreement, and in September the Village Council formally approved the Village Goes Green Initiative (VGGI). The VGGI received funding in the FY 2008-2009 budget to support coordination and implementation of environmentally conscious projects, events and educational outreach opportunities.

A resident-led grass roots green committee was created in 2008 and in partnership with the Key Biscayne Community Foundation, the Village, and local school groups held a successful Green Expo resulting in a light bulb and showerhead exchange and awareness campaigns. A timeline and preliminary budget for longer-term items were also developed and approved by the Village Council. Momentum stalled on these initiatives over the subsequent five years as other Village priorities took precedence.

Mayor Frank Caplan revitalized the Village's Green Initiative by establishing the Citizen Scientist Project at the end of 2011 and by creating and appointing a Green Committee in 2013. The Green Committee's mandate included reviewing the status of the VGGI and suggesting program areas, goals, and objectives for the Village's consideration to plan for a sustainable community. The Committee conducted an internal Green Initiatives Survey and met with Village department heads to establish an overview of what was currently being done within the Village government. Using this and other information gathered in reviewing best practices established in neighboring communities and in consulting with other municipalities and Miami-Dade County, in 2014 the Green Committee began to draft a Sustainability Plan for the Village. This document is the result of those efforts.

ACTION PLAN

We have identified what we believe to be the principal program areas and actions deserving of focus in Table 1; each item is amplified in a separate section of this document. First, initiation requires the commitment of the Council, most preferably, through its adoption of a resolution that formalizes the Village's commitment to becoming a "sustainable and green community" and its allocation of funding for a Sustainability Director to manage the implementation of key programs (detailed below). Second, to understand our shortcomings and to help with prioritization, we need to perform baseline studies that quantitate Village government energy and water usage and waste generation and that compare our performance and building codes and incentives to what we believe to be best practices implemented elsewhere. Third, we should begin the implementation process, addressing the major program areas identified in Table 1. Fourth, we

should examine these issues Village-wide, educating all and establishing enforceable standards where possible.

We recognize that this is a journey, and all that we wish or hope for will not be accomplished in year one. Nonetheless, progress should be monitored regularly, aided by an annual written report that details achievements and shortcomings and the objectives and proposed budget for the coming year.

Table 1: Sustainability Action Plan

2014/2015 Action Items			
Item	**Category**	**Action Item Description**	**Section**
1	Commit to Becoming a Sustainable Community	Adopt resolution to formalize that commitment and adopt recommended regional and Miami-Dade County pledges, ordinances and resolutions	1
2	Sustainability Management	Allocate funding for a Sustainability Director position	2
3	Energy Conservation	Quantify current energy use. Revisit & encourage office energy reduction practices and integrate energy conservation standards and renewable energy sources into new project planning, Evaluate cost effectiveness of replacing existing municipal lightening. Join YGrene's Green corridor.	3S1; 3S2; 3S3; 3S4; 3S5
4	Green Building	New Village owned buildings should be built to the highest green standards. Review and update zoning code to create incentives that encourage Village-wide green building and improved flood control.	4S1; 4S2; 4S4
5	Transportation	Begin transition to green fleet & support improved public transportation	5S1; 5S2
6	Waste Reduction, Reuse, and Recycling	Improve recycling & waste reduction Village-wide, including at Village events. Initiate a reusable water bottle program for Village employees. Expand current recycling drives. Perform baseline analysis of current waste diversion rates.	6S1; 6S2;6 S3; 6S5; 6S7;6S9
7	Green Procurement	Adopt a green procurement resolution and initiate a green purchasing program	7S1; 7S2; 7S3
8	Water Quality & Conservation	Adopt policies and implement programs to reduce pollutants in storm water runoff.	8S4
9	Climate Adaptation and Resiliency	Adopt measures to update environmental and sustainability policies & expand participation in regional planning efforts	9S1; 9S2
10	Community Outreach & Participation	Formalize environmental education/outreach platform & budget for green events	10S1; 10S3

SUSTAINABILITY PROGRAM AREAS AND GOALS

1. Commitment to Becoming a Sustainable Community

This Sustainability Plan contains multi-faceted recommendations to improve the health and well being of Key Biscayne residents and visitors and the overall environmental impact of the Village of Key Biscayne. These recommendations are aligned with established best practices that have been adopted and committed to by government bodies around the country and throughout the region.

Endorsement of the Mayors' Climate Action Pledge, authorized by the Village Council in November 2013, is an important step in affirming the Village's commitment to becoming a sustainable community. Signing this pledge affirms Village support for the Southeast Florida Regional Climate Change Compact, a joint commitment of Miami-Dade, Broward, Monroe, and Palm Beach Counties to partner in mitigating the causes and adapting to the consequences of climate change. By signing the Pledge, the Village agrees to consider implementation at least part of the Southeast Florida Regional Climate Action Plan, which contains specific measures for implementing the Compact.

The Village would further it's commitment to becoming a sustainable community by resolving to implement in whole or in part the 137 steps recommended in Miami-Dade Country's GreenPrint Sustainability and Climate Action Plan and by joining ICLEI, the International Council for Local Environmental initiatives.

2. Director of Sustainability

Effective implementation of this Plan's proposals will require substantial oversight. The Green Committee believes this oversight is best achieved through a qualified member of the Village staff and therefore recommends that the Village Counsel create a new position, Director of Sustainability, reporting to the Village Manager. This position will be partially funded through cost savings from the overseen programs, such as lower utility bills from a switch to more efficient lighting sources and reduced insurance costs.

The Director of Sustainability will support the implementation of the Sustainability Plan by holding the following responsibilities:

- Oversee the energy, water, and waste diversion baseline data studies and propose achievable goals on the basis of those studies;
- Help ensure that the sustainability goals that are adopted are pursued and achieved within established time frames;
- Coordinate the Village's recycling program, including residential and commercial collection, public spaces and Village managed buildings;
- Manage the Village's Green Procurement Program initiative;
- Identify and review any existing regulations related to chemicals used on

island landscaping;
- Serve as the Village point of contact for environmental certification processes;
- Interact with community groups, encouraging each to implement green initiatives;
- Serve as the Village point person for Village-supported recycling drives and other Green-themed events;
- Interact with other municipalities and attend conferences and meetings of interest on Green and Sustainability matters on behalf of the Village, reporting salient points to the Village Manager;
- Attend Green Committee meetings, informing it of progress implementing the Sustainability Plan and seek advice and support when useful;
- Prepare an annual, written report detailing progress and shortcomings and the objectives and proposed budget for the coming year.

3. Energy Conservation

The fossil fuel based energy sources that we depend upon contribute to air pollution and greenhouse gas emissions. By reducing energy consumption and installing renewable energy sources at the municipal, commercial and residential levels, the Village can increase economic performance, decrease dependence on nonrenewable resources, and enhance air quality in our community.

Mitigation of climate impacts is an area Key Biscayne can lead in by example. Certainly our community's impact on overall greenhouse gas emissions is small. However, as a community with significant assets at risk from the impacts of climate change and with likely significant upcoming costs to adapt to climate change, the Village has a lot to gain by becoming a leader in reducing its greenhouse gas emissions.

Short Term Goals:

3S1. Augment and reinforce existing Village government policies that encourage computer/ancillary equipment to be turned off when not in use;

3S2. Following green procurement recommendations in Section 7, ensure that new purchases meet high energy efficiency ratings;

3S3. Evaluate the cost effectiveness of replacing current lighting in all municipal buildings and streets with more efficient light bulbs and lamps. Establish a schedule for purchase and installation of those that are determined to be cost effective;

3S4. Evaluate the installation of renewable energy sources in existing and yet-to-be built Village-owned buildings and properties;

3S5. Join the YGrene's Green Corridor to provide low interest financing for residents and condo boards looking to purchase renewable energy supplies and energy efficiency upgrades.

Long Term Goals:

3L1. Establish procurement protocol that encourages the purchase of Energy Star certified equipment in the Village;

3L2. Purchase and install renewable energy sources where the studies performed above indicate feasibility and cost effectiveness;

3L3. Encourage commercial and residential buildings to reduce energy consumption through community education, incentives to become Energy Star certified, and building codes that facilitate energy efficient residences;

3L4. Facilitate purchase and installation of renewable, non-polluting energy sources Village-wide;

3L5. Decrease heat island effects by supporting increased canopy coverage.

4. Green Building

Green buildings reduce energy use, water consumption and CO2 emissions, while leading to significant savings in operations costs over time. While the energy aspects of green buildings are addressed in Section 2 above, green buildings also incorporate elements that improve the experience of occupants, such as increased day lighting, better indoor air quality and improved temperature control. New buildings and properties developed by the Village should be built to the highest green standards to optimize these benefits. Existing Village-owned properties should be upgraded over time to environmental standards for green buildings. The Village should encourage green building and housing practices within the community to minimize environmental impacts and greenhouse gas emissions.

Short Term Goals:

4S1. Evaluate current Village properties to determine what changes would be required to obtain LEED (Leadership in Energy and Environmental Design) for Existing Buildings certification;

4S2. Adopt a resolution for all new construction projects to be built to meet LEED Platinum standards;

4S3. Review approaches adopted by other communities to determine the changes that would incentivize green building initiatives in businesses and private structures;

4S4. Adopt a sustainable building ordinance and an electrical energy reduction resolution.

Long Term Goals:

4L1. Construct new government buildings and facilities to LEED (Leadership in Energy and Environmental Design) Platinum standards and utilize the LEED Existing Buildings or Commercial Interiors specifications for any existing buildings that undergo renovation;

4L2. Incorporate bonuses into the zoning code for “Green Initiatives” such as buildings that are LEED, Florida Green Building Council (FGBC) or Energy Star certified; reduce storm-water runoff; incorporate alternative energy systems,; incorporate climate resiliency measures; and/or utilize water capture and reuse systems;

4L3. Implement programs to assist and support high-density residential buildings and unit owners to apply sustainable design measures;

4L4. Achieve responsible growth management objectives.

5. Transportation

Most of our modern means of transportation are powered by fossil fuels, which contribute to local air pollution and greenhouse gas production. In a community where transportation distances are minimal and the availability of solar power is abundant, the transition to a “green fleet” should become an integral objective in the cultivation of a sustainable community.

Short-Term Goals:

5S1. Purchase electric and hybrid vehicles when feasible during the normal replacement cycle for Village vehicles;

5S2. Engage with Citizen’s Independent Transportation Trust (CITT) to improve bus service for Key Biscayne residents, employees and visitors, including increasing frequency and reliability of service and establishing routes that increase user convenience;

5S3. Adopt and implement a gasoline reduction resolution.

Long-term Goals:

5L1. Purchase electric golf cars for Village employees wherever golf cats can feasibly replace motorized vehicles;

5L2. Install solar charging stations for Village fleet of electric vehicles, golf carts and employee owned electic vehicles and consider installing solar charging stations for electric vehicles and golf carts in public parking spots;

5L3. Provide preferred parking to electric vehicles and golf carts in public parking spots;

5L4. Incentivize Village staff, residents and visitors to use vehicles with alternative fuels by encouraging Miami-Dade County Causeways to reduce toll tariffs for “Green Vehicles”;

5L5. Suggest Miami-Dade County provide the Village with “Green Transportation,” such as hybrid buses which are currently not included in the route to Key Biscayne;

5L6. Evaluate feasibility of local transit/bus/trolley options for residents;

5L7. To reduce traffic onto and off of the island, evaluate with CITT the possibility of providing free trolley service and free park entry to Crandon and to Bill Baggs State Park on weekends;

5L8. Encourage multi-family buildings to establish Green Vehicle parking spots and install charging stations for electric vehicles and golf carts;

5L9. Encourage school transit options that reduce congestion and save energy, such as voluntary no driving days for school drop offs and increased crosswalk protection for children that walk or bike to school;

5L10. Incorporate transit, walking and biking options into comprehensive and land use planning for the Village.

6. Waste Reduction, Reuse and Recycling

Improperly managed solid waste poses a number of risks to human health and the environment, including water contamination; increased flooding due to blocked drainage canals, pumping stations and sewers; harm to aquatic species and birds; and increased greenhouse gas emissions. Activities to prevent or recycle waste reduce these problems and can lower waste management costs.

The Village should works towards reducing waste by discouraging consumption of single-use disposable products, particularly polystyrene and plastic products, and by promoting increased recycling, composting of yard and kitchen waste, grease collection, white goods recycling, and construction project reuse and recycling.

Short Term Goals:

6S1. Purchase and install more efficient recycling/disposal bins with better signage Village-wide;

6S2. Educate residents on recycling best practices. Increase outreach and education on recycling, including additional signage on toters and brochures, posters and refrigerator magnets with varying levels of detail regarding waste management options;

6S3. Work with vendors to implement waste reduction and recycling measures during Village celebrations such as Winterfest and the July 4th parade;

6S4. Promote installation and improved recycling services in other community locations such as beach facilities, schools, and apartment buildings;

6S5. Educate Village staff involved in collecting waste to ensure the separation of all recyclables;

6S6. Expand the current recycling drive to include other items, such as household hazardous waste and clothing, and establish permanent drop-off points for electronics, printer ink and compact fluorescent bulbs;

6S7. Promote use of reusable water bottles in lieu of single use bottled water by providing Village employees with reusable water bottles and easy access to water bottle refilling stations. Assess the cost and savings associated with such a program and evaluate the potential of installing filtered and reusable-bottle-friendly water fountains in Village/community buildings and parks*;*

6S8. Work with restaurants in the Village to assist them in reducing use of plastics and in implementing grease recycling programs and drain maintenance to reduce FOG-related sanitary sewage overflows in the Village;

6S9. Establish a baseline and means of regular reporting of the landfill diversion rate, end market data for recyclables and compost materials, and additional relevant information, such as contamination of recyclables from haulers.

Long Term Goals:

6L1. Reduce the traffic and circulation of refuse trucks and containers;

6L2. Facilitate the collection for reuse and recycling of furniture, fixtures, electronics, construction and demolition waste, clothing, household items, white goods and hazardous items;

6L3. Achieve 35% landfill diversion rate for single family residential and municipal buildings by January 2016;

6L4. Achieve a landfill diversion rate of 50% through recycling and composting by 2020;

6L5. Achieve 90% landfill diversion by sending any waste that cannot be recycled or composted to low environmental impact waste-to-energy facilities.

6L6. Over the long term the Village should evaluate alternative waste diversion solutions, such as waste to energy, for remaining waste that would otherwise be landfilled.

7. Green Procurement

Everything created or purchased has a life cycle that impacts the environment from the moment of production to the final disposal stage. By practicing and encouraging the use of environmentally-friendly and non-toxic products, the Village will help the health and well-being of Key Biscayne residents, reduce the environmental and greenhouse gas footprint of its purchases, and reduce the amount of toxic or hazardous material introduced into the Village. Green purchasing can include everything from office supplies and cleaning supplies, to fleet vehicles and construction materials, to service agreements for landscaping and waste hauling.

Short Term Goals:

7S1. Adopt a green procurement resolution for Village procurement;

7S2. Develop guidelines using existing standards and guidelines such as the EPA's Comprehensive Procurement Guidelines, Design for the Environment standards, Energy Star, and Cradle to Cradle;

7S3. Begin implementation of a centralized Green Procurement Program (GPP) with the goal of full implementation by June 2015.

Long-Term Goals:

7L1. Fully implement the GPP. Build upon the program and its guidelines over time as new products and technologies become available;

7L2. Require purchase of safe and green products by permitted concessionaires/vendors in government maintenance operations and Village-sponsored special events;

7L3. Educate the Village staff and residents on the benefits of green products and the dangers of the hazardous ones they replace;

7L4. Promote the use of non-toxic, reusable, recycled, recyclable, and renewable goods by the Village and community-wide.

8. Water Quality & Conservation

Located on a barrier island, the Village is particularly sensitive to the conditions of its waterways – including the beaches, canals, and Biscayne Bay – and should support their preservation and conservation. By encouraging the protection of both potable and waste water, the Village will preserve the quality of life and values of waterfront properties, the safety and viability of water-related recreational activities, and the habitat of the aquatic ecosystem.

Short Term Goals:

8S1. Work with Citizen Scientist Project and other outside groups on initiatives to preserve water quality in our beaches, canals and irrigation;

8S2. Evaluate automation of watering systems that avoid watering fields when irrigation is not needed;

8S3. Establish a program to test the drinking water quality in public water fountains;

8S4. Adopt internal practices and ordinances to reduce pollutants in storm water runoff in Village operations and facilitate best practices to reduce pollutants in storm water runoff from privately owned properties.

Long Term Goals:

8L1. Decrease water consumption at the community and municipal levels by communicating the importance of conservation and by use of water capture and reuse systems, purple pipes and low flow technologies;

8L2. Maintain or improve water quality of discharges entering Biscayne Bay and reduce flooding by improving the capacity of the Village storm water system and continuing to implement best practices related to landscaping of Village managed properties; and encouraging best practices to reduce runoff from residential and commercial properties;

8L3. Encourage private property owners to incorporate landscaping and building designs such as green roofs and collection vessels that support natural storm-water filtration and reduced flooding.

8L4. Support community education initiatives such as Florida Yards and Neighborhoods “Right Plant, Right Place” initiative;

8L5. Work with the Miami-Dade County and other governmental bodies to monitor and mitigate risks from the wastewater treatment plant and landfill on Virginia Key.

9 Climate Change Adaptation

The Southeast region of Florida is considered one of the most vulnerable areas in the United States to the impacts of global climate change. Anticipated effects include sea level rise, increased storm surge, beach erosion, and heavier and more frequent coastal rains. The average elevation of the island is less than five feet, and the island’s surface, consisting of layers of weak ‘shelly sandstone,’ creates particular challenges in addressing flooding or sea level rise.

Many of the initiatives described above, in addition to their potential to reduce costs and enhance the quality of life, contribute our share to preventing the worse of projected outcomes resulting from climate change. The Village of Key Biscayne should recognize the island’s vulnerability and work to understand and

develop short-term and long-term adaptation strategies to improve the Village's resilience.

Short-Term Goals:

9S1. Adopt measures to update Key Biscayne's environmental and sustainability policies;

9S2. Continue and expand participation in regional planning efforts addressing the environment and sustainability, including the Miami-Dade County Sea Level Rise Task Force, the Southeast Florida Regional Climate Compact, the South Florida Regional Planning Council, and the Citizen's

9S3. Evaluate areas of Key Biscayne most vulnerable to flooding in the short and long term and adopt zoning measures and infrastructure designs that minimize long-term climate impacts.

Long-Term Goals:

9L1. Join with the ongoing projects of other communities, including Miami Beach, on sea level rise scenarios and inundation mapping and modeling to help establish priorities, road designs leading to and within then Village, and protective zoning requirements;

9L2. Adopt community flood planning measures that will lower flood insurance rates through FEMA. Evaluate and adopt as appropriate measures in each of the tiers in the FEMA program that reduce flood insurance rates from their current 15% to up to 45%.

9L3. Participate in the formulation of crisis management plans that address flood, fire, evacuation and stormwater inundation among others;

9L4. Evaluate critical infrastructure elevations to ensure that they protect against seasonal flooding and storm surge. Address shortcomings in a timely manner;

9L5. Require new structures incorporate designs that protect against storm surges;

9L6. Work with governmental partners to find solutions for beach erosion including the possibility of a sand bridge or pump to carry sand to Key Biscayne's beaches that would otherwise naturally nourish our beaches, but for Government Cut.

10. Community Outreach & Participation

The Sustainability Plan depends on community awareness and support. Education and outreach strategies should communicate the benefits sustainability as exercised by the Village and by private businesses and

individuals.

Short Term Goals:

10S1. Obtain the assistance of the Key Community Foundation, its Citizen Scientist Project, Key Biscayne Community Partners, Key Biscayne schools, the Citizen Scientist Initiative and the Condominium Presidents' Council in communicating the benefits of sustainability planning;

10S2. As the Village contemplates decisions and expenditures reflecting sustainability goals, schedule lectures from experts and other programs to help residents understand the science, risk management, and economic reasoning behind the contemplated decisions;

10S3. Budget for and communicate sustainability initiatives at annual events organized by the Village and by community organizations. Reinforce the messages at recycling drives, Green Expos on the Village Green, and additional events such as an Environmental Film Festival;

10S4. Promote Village community gardening and food programs, farm share buying clubs and farmers' market.

APPENDIX

For information on the Mayors' Pledge and Southeast Florida Regional Climate Compact and Action Plan:

www.southeastfloridaclimatecompact.org

Municipalities that have signed the Pledge include:

Ft. Lauderdale	Key West	Boynton Beach	Hillsboro Beach
Pinecrest	Dania Beach	Hollywood	Lauderhill
Davie	Hallandale Beach	Miami Beach	Pompano Beach
Oakland Park	Lauderdale-By-The –Sea	Coconut Creek	North Lauderdale
Wilton Manors	Deerfield Beach	Margate	Sunrise
Surfside	South Miami	Bay Harbor Islands	Delray Beach

For more information on the Miami-Dade County GreenPrint Plan see:

www.miamidade.gov/greenprint/

Programs and resolutions currently being implemented in Miami-Dade County include:

- Miami-Dade Ordinance 07-65 – an ordinance concerning the sustainable buildings program;
- Implementing Order 8-8/Resolution No. R-1200-05 - establishing the Miami-Dade County policy of incorporating sustainable development building measures into the design, construction, renovation and maintenance of County-owned, County-financed, and County-operated buildings;
- Electrical Energy Reduction Resolution R-228-09 - directing that a plan be developed to reduce electric energy usage in County governmental operations by 20 percent relative to 2007 consumption levels (or 234,000 Megawatt hours) by no later than 2014.
- Gasoline Reduction (See M-D County R-969-03)
- Miami-Dade Country Resolution R-1053-09 - directing the county mayor or county mayor's designee to prepare and present to the board a "green"

procurement preference program for the purchase of environmentally responsible products and services;

- Miami-Dade County Administrative Order 11-3 (Life Cycle Costing Procedure)

- Miami-Dade County Resolution R-228-09 - a policy directing that a plan be developed to reduce electric energy usage in County governmental operations by 20 percent relative to 2007 consumption levels (or 234,000 Megawatt hours) by no later than 2014.

Other useful resources include:

- The Miami-Dade county "Buy Green" Purchasing Guide found at http://www.miamidade.gov/green/library/green-purchasing.pdf

- For more information on the YGrene's Green Corridor see https://ygrene.us/fl/green_corridor